

From	To
George Robin/R9/USEPA/US	"Jim Walker" <jameswalker5@msn.com>
CC	BCC
Kate Rao/R9/USEPA/US@EPA David Albright/R9/USEPA/US@EPA	
Subject	Date/Time
Fw: (3 of 3) Sunrise Technical Review Request for Information	08/20/2012 01:36 PM

Item Body

fyi

----- Forwarded by George Robin/R9/USEPA/US on 08/20/2012 01:30 PM -----

From: "Iriart, Jon R" <jririart@sycamore.com>
To: George Robin/R9/USEPA/US@EPA
Cc: "Hiestand, Rob (HIES@chevron.com)" <HIES@chevron.com>
Date: 08/15/2012 09:23 AM
Subject: FW: Sunrise Technical Review Request for Information

Jon R. Iriart
Regulatory Compliance- CA Partnerships
Ph: (661) 615-4604 Cel: (661) 203-8427
Fax: (661) 615-4610
jririart@sycamore.com

From: Smith, Darren [mailto:DarrenSmith@chevron.com]

Sent: Tuesday, August 14, 2012 1:20 PM

To: Iriart, Jon R

Cc: Hiestand, Rob W

Subject: RE: Sunrise Technical Review Request for Information

Jon,

Here is the only remaining pertinent information they are requiring. There isn't much in the well files that I think would be useful after this.

Let me know what else you might need.

Darren Smith

Chevron CNAEP

DarrenSmith@chevron.com

Mobile: 661-381-0530

From: Iriart, Jon R [<mailto:jririart@sycamore.com>]

Sent: Monday, July 30, 2012 2:39 PM

To: Smith, Darren

Cc: Hiestand, Rob W

Subject: FW: Sunrise Technical Review Request for Information

Darren, we are having some trouble locating the highlighted items below per the EPA request. Can you please read through the bullet items and advice and/or provide what information you have?

I appreciate your help,

Jon R. Iriart
Regulatory Compliance- CA Partnerships
Ph: (661) 615-4604 Cel: (661) 203-8427
Fax: (661) 615-4610
jririart@sycamore.com

From: Hiestand, Rob [<mailto:hiestrw@chevron.com>]

Sent: Monday, June 25, 2012 6:36 PM

To: David.Stein@CH2M.com

Cc: Andrew.Redmond@CH2M.com; Beck, Daniel L; Sam.Shannon@CH2M.com; Iriart, Jon R

Subject: Re: Sunrise Technical Review Request for Information

Alright. This will take some time as I need to work with Jon at the site to retrieve the info.

Rob Hiestand

On Jun 25, 2012, at 3:06 PM, "David.Stein@CH2M.com" <David.Stein@CH2M.com> wrote:
Rob –

They probably have the same problem and/or don't know where to look for it. Since we do not have all of the original correspondence, we really have no way to point him to the specific info he is asking for.

Please let us know what you decide.

Thanks
Dave

From: Hiestand, Rob [<mailto:hiestrw@chevron.com>]

Sent: Monday, June 25, 2012 2:47 PM

To: Redmond, Andrew/BAO; DLBeck@sycamore.com

Cc: Stein, David/BAO; Shannon, Sam/MGM; Iriart, Jon R

Subject: RE: Sunrise Technical Review Request for Information

Andrew,

With exception to the last bullet item EPA already has all of this other information that we submitted to them when drilling the new wells and with our normal quarterly reports. Is there a reason we need to resubmit this information again? I am asking because a lot of this information is in document archives and not readily available regarding the complete well details etc. Please advise.

Thanks,

Rob Hiestand, PSC Operations Engineer
[SJVBU Cogen Team Support](#)
Chevron Global Power Company, Power Support Center
9525 Camino Media C1058
Bakersfield, CA 93311
Tel 661-654-7787 Cell 661-303-7923
hies@chevron.com

From: Andrew.Redmond@CH2M.com [<mailto:Andrew.Redmond@CH2M.com>]

Sent: Monday, June 25, 2012 10:16 AM

To: DLBeck@sycamore.com; Hiestand, Rob

Cc: David.Stein@CH2M.com; Sam.Shannon@CH2M.com

Subject: RE: Sunrise Technical Review Request for Information

Hi Dan and Rob,

In an effort to respond to the request for additional information by George Robin at EPA, we are hoping you can provide the following:

□□□□□□□□□□ Annular Monitoring System details, including chemical analysis of the annulus fluid, and if possible a text description of how the annular monitoring system works - is it closed or

open to the atmosphere? Can you indicate on the wellhead diagram where the annular monitoring is performed?

□□□□□□□□ Well Completion Reports for Injection Wells (A72TR, B122, WW3, and WW4). EPA is requesting the full descriptions of the wells, not the one-page form submitted to the regulatory agency. Detailed well schematic diagrams, copies of geophysical logs performed on the wells, and results of any well step rate tests and pressure fall off tests performed on the wells when new are needed.

□□□□□□□□ Well Completion Reports for all Monitoring Wells (including 30F0072T and 30F0122), with detailed construction schematics, geophysical logs, and all step rate and pressure tests performed.

□□□□□□□□ Locations (in GIS file, or longitude/latitude coordinates) of A72T, A72TR, B122, WW3, WW4, and monitoring wells.

□□□□□□□□ Narrative describing if there have ever been air entrainment problems when starting injection in new wells in these air sands.

□□□□□□□□ Plugging and Abandonment Report for A72T well with details on the volume and type of cement used to plug the well and a text description of work performed to implement the plugging.

□□□□□□□□ Plugging and Abandonment estimates for injection wells such that third party well service contractors can perform the work including surface restoration expense and contingency costs. Every well seems to have a \$50,000 bond set aside for financial assurance to cover plugging costs but the EPA is asking for a detailed work plan and detailed cost estimates for each injection and monitoring well - separately - to verify that the dollar amount of the bonds is adequate.

Sincerely,
Andy Redmond
CH2M HILL
Environmental Services

155 Grand Ave, Suite 800
Oakland, CA 94612
direct: 510-587-7523
mobile: 415-290-7062

From: George Robin [<mailto:Robin.George@epamail.epa.gov>]

Sent: Monday, April 30, 2012 11:03 AM

To: Beck, Daniel L

Cc: hies@chevron.com; David Albright; dan.wermiel@conservation.ca.gov; sgray@waterboards.ca.gov; R9-Deep@epamail.epa.gov

Subject: Sunrise Technical Review Request for Information

Daniel,

Please refer to our (Administrative Review) letter to Mr. Kelly Lucas dated March 13, 2012 wherein we begin the Technical Review phase.

Below is a list of information that we are requesting as part of this Technical Review process.

Please submit your response in the manner that we requested in our letter.

If you have any questions or wish to discuss, please do not hesitate to call me.

George Robin

Engineer

Underground Injection Control program

Ground Water Office, WTR-9

US E.P.A. Region 9

75 Hawthorne St.

San Francisco, CA 94105

(415) 972-3532 ofc

Sunrise Power Company, LLC Permit Application

Additional Information Required to Complete the Technical Review

The technical review is in progress, but additional information is needed from the Applicant before it can be completed. Below are items needed to complete the review and analysis of the application:

1. Falloff test data and results.
2. Monitoring well pressure data and history and location on maps.
3. Results of MITs and injection profile surveys.
4. Open hole and cased hole logs for the permitted injection wells and any reservoir pressure data in WW3 And WW4 when drilled and/or later.
5. Step-rate test data and reports.
6. Injectate fluid analysis reports for the past four quarters.
7. P&A report for the A72T well.
8. Show the location of the A72TR replacement well on the maps in relation to the A72T well. Provide the well record and as-built schematic for the A72TR well.
9. **Attachment A, Area of Review Methods:**
Provide the calculations of average porosity and net thickness from logs and cores used to map pore volume in AOR. How was average porosity and net thickness of the injection zone determined? That

determination is not fully described in the application. The Campbell reference is cited for the porosity and permeability data, but it lacks the specifics for the basis of those determinations.

Please provide clarification for Table A-1, “Conservative Projections of Injection Volumes by Well”. What is the basis for the volumes listed in the table and how do those volumes relate to the “Projected Radius of Injection Front by Well” in Table A-2?

10. Attachment H. Operating Data:

This attachment should include the proposed daily injection rates, volumes, and pressures, both average and maximum values, and information on the nature of annulus fluid. Please provide those values.

Table H-1: Annular pressures indicate a lack of mechanical integrity in three of the four wells. Please clarify whether that is the case or not and whether actions were taken to restore integrity. Please add the units of injection pressure, injection rate, temperature, and volumes injected to the table heading.

11. Formation Testing Program:

Describe how reservoir pressure will be measured if fluids are present in WW5 and WW6? Was fluid present in WW3 and WW4 when drilled and were samples obtained? Are there any pressure data or core data available for those wells? Is so, please provide those data. Describe how injectivity testing and pressure monitoring will be performed prior to injection operations in WW5 and WW6. Does this include step-rate testing for formation fracture gradient? Were step-rate tests (SRT) performed in the existing wells? If so, please provide the SRT data and reports for those wells.

12. Stimulation Program:

Describe how “air entrainment” will be avoided in the initial stages of injection in WW5 and WW6. How was it avoided in past injection well completions in the Upper Tulare Formation?

13. Construction Procedure:

Where is the nearest USDW (TDS of 10,000 mg/l or less) formation(s) located laterally from these wells. Describe the annulus fluid to be utilized in more detail. Are there any water supply or drinking water wells located within the AOR? Is so, please identify and provide the depth, source aquifer, TDS content, and location of those wells.

14. Construction Details:

Provide well schematics for the four existing injection wells that depict the as-built construction with actual depths of wellbore equipment and perforations or liners and volumes and type of cement used in the construction. The well schematics presented in Attachment M of the application show perforations rather than the slotted liners in five of the six wells described in the narrative discussion. In addition, the well schematics indicate approximate depths rather than actual depths of perforations, packer, etc. Also, please add a well schematic and plugging and abandonment report for the A72T well.

15. Monitoring Plan:

Please provide the graphs of pressure versus time obtained from monitoring wells since injection commenced. Provide the name, number and location of the monitoring wells on the maps provided in

the application and the distance from the paired injection wells. Provide as-built well schematics of the monitoring well construction and plugging and abandonment plans.

16. Plugging and Abandonment Plan:

Provide as-built well schematics for the four existing wells and monitoring wells with actual depths of casing and perforations or liners with volumes and type of cement used in plugging the wells identified on the schematic diagrams. The application should include a completed EPA Form 7520-14, Plugging and Abandonment Plan, for each well with an estimate of the P&A cost for each well provided on the forms. The P&A estimates should be prepared such that third party well service contractors perform the work and include surface restoration expenses and contingency costs for unforeseen problems in plugging the wells.

17. Financial Assurance for Plugging and Abandonment:

The bond amounts will be reviewed to ensure that sufficient funds are available to cover the updated P&A cost estimates plus any contingency costs required by EPA. A bond should also be provided for the 30F0122 monitoring well.

18. Aquifer Exemptions:

The exempted aquifer into which injection is authorized in the EPA approval of the CDOGGR Primacy Application is the Holocene Alluvium, which is present above the Pleistocene Tulare Formation in the project area. It is listed with a *subsea depth* to the top of the exempted zone of 399 feet and a thickness of 125 to 252 feet in Table 1 of Appendix B, District 4 aquifer exemptions. Apparently, the depth to the top of the exempted zone of 399 feet is actually the depth from the ground surface (or KB reference elevation?), not subsea depth. That depth would apparently be equivalent to the top of the Upper Tulare Formation as depicted in Figure F-3, rather than the Holocene Alluvium which is at the surface in the project area. The bottom of the exempted zone is not clearly specified. Please provide clarification as to



the Upper Tulare Formation interval Sunrise considers exempted in the project area. 30F 72TR.pdf